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In recent years, enterprises have been very successful in utilizing capital tied up in production reserves by improving their material and technical supply systems. Turnover of production reserves in enterprises of the ministry was speeded up by 30 percent between 1948 and 1951, which made possible a sharp reduction in the amount of capital assigned to the supply function. However, much more can be done in this line, especially by reducing excessive material reserves at enterprises. Reducing consumption norms for materials, cutting down on rejects, and substituting cheap, plentiful materials for critical materials are all means of reducing production reserves and hence of speeding up capital turnover.

Strict norms for material reserves in warehouses should be set up to improve the supply systems of enterprises. Enterprises should organize proper receipt, storage, and inventory of supplies, so that overstocking or shortages will be apparent immediately. The directors of the enterprise should be made responsible for capital turnover, and should see that the purchase and delivery of materials are geared to the production plan, taking existing stocks into account; they should also set limits to purchases of materials by the various supply services of the enterprise.

Capital turnover can also be speeded up by more efficient organization of the paper work connected with shipping, and by the shipping of products only to purchasers who can guarantee payment.

REVIEW 1952 ACHIEVEMENTS OF INDUSTRY -- Moscow, Avtomobil'naya i Traktornaya Promyshlennost', Nov 52

In 1952, the Yaroslavl' Motor Vehicle Plant increased the output of YaAZ-210 12-ton diesel trucks and YaAZ-210Ye 10-ton dump trucks. The Minsk Motor Vehicle Plant organized the output of 25-ton MAZ-525 dump trucks. The Mias Ural Motor Vehicle Plant imeni Stalin started production of the Ural ZIS-352 truck equipped with the NAMI-G78-A gas generator unit, which operates on unseasoned wood.

The Minsk Tractor Plant will start production of the Belarus' tractor, powered by the D-35 diesel engine, at the end of 1952. At the same time, the state is testing the KMTZ-11 and VTZ-24 plowing tractors, which are also equipped with compression-ignition engines.

The Stalingrad Tractor Plant, aided by NAMI (State Union Scientific Research Tractor Institute), is organizing the production of GB-58 gas generator tractors, which operate on wood or peat briquettes, and GT-58 gas generator tractors, which operate on hard coal.

The Minsk Tractor Plant, aided by NAMI and NAMI (Scientific Research Motor Vehicle and Motor Institute) is improving the KT-12 skidding tractor which it produces. The power of the tractor's gas engine is being increased and the gas generator is being adapted to operate on unseasoned wood.

The Khar'kov Tractor Plant has designed the KMTZ-12 electric crawler tractor, which is now undergoing state tests.

Motor vehicle plants are making wide use of 18KhGT and 5KhNT steels to replace expensive alloy steels containing molybdenum and nickel. Tractor plants are utilizing the experience of motor vehicle plants, and using 18KhGT steel instead of 20Kh steel for making gears for tractor transmissions.

Aided by NAMI, the Gor'kiy Motor Vehicle Plant imeni Molotov has adopted a new alloy for casting cylinder heads -- low-silicon zinc silumin containing secondary aluminum.

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Wide use of P-Orgavtoprom oilless binder in foundries will save 1,200 tons of vegetable oil yearly.

Improvement in the quality of workmanship has reduced the number of complaints from consumers. Thus, in the first 6 months of 1952, there were one third as many complaints about ZIS-150 trucks and 40 percent as many complaints about GAZ-51 trucks as there were in the corresponding period of 1949.

In the first 6 months of 1952, foundry operations were mechanized as follows: mixing molding materials, 99 percent; charging furnaces, 92 percent; knocking out castings, 99 percent; and cutting off and cleaning castings, 95 percent.

In the first 6 months of 1952, mechanization of loading and unloading operations in ministry plants was as follows; rail transport, 70.5 percent; and motor transport, 33 percent.

IMPROVE QUALITY OF OUTPUT -- Moscow, Avtomobil'naya i Traktornaya Promyshlennost', Feb 53

Serious shortcomings in efforts to improve the quality of output have been noted at plants of the Ministry of the Motor Vehicle and Tractor Industry, especially at tractor plants.

The percentage of complaints received about ZIS-150 trucks is considerably higher than for GAZ-51 trucks. The design of the GAZ-51 truck was carefully worked out by the Gor'kiy Motor Vehicle Plant imeni Molotov and subjected to exhaustive tests before it was mass produced. As a result of this careful development, no major changes had to be made in the design after the truck was put into production. On the other hand, there were serious omissions in the testing of the ZIS-150 truck by the Moscow Motor Vehicle Plant imeni Stalin, and a number of shortcomings in design (insufficient strength in the frame, radiator, propeller shaft, and other units) were not discovered until the trucks were produced and put into operation. These shortcomings had to be eliminated by changing the production process, which took a considerable amount of time.

There are fewer complaints about DT-5+ tractors produced by the Khar'kov Tractor Plant than about the same tractors produced by the Stalingrad Tractor Plant.

There are many complaints about the quality of instruments and electrical equipment for motor vehicles, such as speedometer cables, and pressure and temperature gauges.

In the second and third quarters of 1952, there was an increase in complaints about tractors made by the Lipetsk and Khar'kov tractor plants, owing to mistakes in production. A number of the complaints were about broken piston pins (Lipetsk Tractor Plant) and the front frame member (Khar'kov Tractor Plant). The Lipetsk plant failed to take effective measures to eliminate shortcomings in KD-35 tractors, and complaints continued to come in.

Use of obsolete technological processes and improper care of measuring instruments at one plant resulted in a drop in the quality of the bearings it produced.

Production of a new machine should not be undertaken without first preparing the basic production accessories, especially those used in production control. Faulty preparatory work of this kind was evident in the organization of production of the KT-12 tractor at the Minsk Tractor Plant and of the D-54 engine at the Rubtsovsk Altay Tractor Plant.

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Instead of checking the performance of their products in the field as the Minsk Motor Vehicle Plant does, some plant directors, such as those of the Kuybyshev Avtotraktorodetal' Plant and the Vladimir Tractor Plant, gauge the quality of their output by the number of complaints they receive from consumers.

At a number of plants, there are discrepancies between design and technological documentation owing to the lack of a system that insures inclusion in the technological process of all changes made in blueprints by the design division. At the Krasnodar Oktyabr' Plant, specifications for hardness of castings were changed in the blueprints of parts, but plant technologists were not notified of the change, and it was not noted in the technological documentation. As a result, the plant was making parts according to the specifications of the old blueprints for some time after the change.

Deviations from standard technological processes and consequent reduction in the quality of products, such as those which took place at the Saratov Serp i Molot Plant and other plants, must be eliminated. Systematic checking of the observance of established technological processes, as practiced by the Gor'kiy Motor Vehicle Plant imeni Molotov, the Khar'kov Tractor Plant, the Moscow First State Bearing Plant, and other plants of the ministry, has raised the technological discipline of these enterprises.

Different control methods are used at different plants. Motor vehicle plants have a Bureau of Methods of Technical Control (BMTC) in design bureaus of technological divisions to develop control methods.

In the new statute concerning the Division of Technical Control, the function of controlling the accuracy of accessories is given to this division, and a control sector with control points for checking production accessories in the shops is provided for.

There are still cases where central measuring laboratories and control and checking points have not registered with the Committee for Measuring Instruments under the Council of Ministers USSR. Central measuring laboratories and control and checking points should be supplied with standard measures and measuring instruments, especially those used in the control of surface quality.

HIGH-SPEED CUTTING SPEEDS PRODUCTION -- Moscow, Avtomobil'naya i Traktornaya Promyshlennost', Jul 53

More than 20 percent of the metal-cutting machine tools in the motor vehicle and tractor industry are being operated by the high-speed method. In 1952, thousands of machines were converted to high-speed cutting, which increased labor productivity in machining operations 15-20 percent. Further conversion to high-speed cutting in 1953 reduced the labor consumption of a GAZ-51 truck by 0.45 norm-hour, of a GAZ-63 by 1.10 norm-hours (both trucks made at the Gor'kiy Motor Vehicle Plant imeni Molotov), and of a ZIS-150 truck by 0.53 norm-hour (truck made at the Moscow Motor Vehicle Plant imeni Stalin).

Bearing plants must convert more automatic gear-cutting machines and other equipment to high-speed cutting methods.

High-speed grinding must be applied on a wider scale. At the Moscow Motor Vehicle Plant imeni Stalin, conversion to high-speed grinding in mass production has reduced machine time 15-40 percent, improved surface quality 20-40 percent, and increased the durability of grinding wheels 20-50 percent. However, before initiating high-speed grinding, grinding speeds must be established, methods of balancing grinding wheels must be developed, and the abrasive industry must supply grinding wheels of increased strength and improved cutting qualities.

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At the Gor'kiy Motor Vehicle Plant imeni Molotov, the feed of a model 116 lathe made by the Moscow Plant imeni Ordzhonikidze was increased from 0.26 to 1.89 millimeters per revolution in machining axle housings, thereby reducing machine time from 1.7 to 0.3 minutes.

The Khar'kov and Vladimir tractor plants have adopted from the motor vehicle plants a new method of making cylindrical gears which improves the accuracy and quality of the gears. The Khar'kov Tractor Plant and the Samarkand Krasnyy Dvigatel' Plant have adopted a new method developed by Orgavtoprom (All-Union State Institute of Motor Vehicle Technology) for machining hardened cylinder liners. Use of the new method at the Krasnyy Dvigatel' Plant reduced rejects in machining cylinder liners 15-20 percent. This method is not applied sufficiently at other enterprises.

The Gor'kiy and Moscow motor vehicle plants use a great number of automatic polishing machines, but other plants are lagging in the automatization of this work. The Gor'kiy Motor Vehicle Plant uses semiautomatic stripping machines in its foundries, but tractor plants have done little to automatize such processes.

Bearing plants now make outer rings by cold stamping instead of forging. The new method reduces labor consumption 30-35 percent and metal consumption 7 percent.

The Gor'kiy Motor Vehicle Plant and the Minsk Bicycle Plant both use a high-productivity salt bath method for soldering bicycle frames, but the Khar'kov Bicycle Plant continues to use the old method, which consumes great amounts of labor and solder.

The percentage of hand labor in the production of ZIS-585 dump trucks is 48 percent; of KD-35 tractors, 36 percent; and of M-72 motorcycles, 35 percent. Most of the hand labor is found in the press, assembly, finishing, and painting sections; it must be mechanized by the use of pneumatic and electric tools, special attachments, and mechanized assembly stands.

At a number of plants, there is a disproportion between the productive capacity of different shops and sections. At the Kiev Motorcycle Plant, the capacity of the heat treating shop is much smaller than that of the engine shop. At the Omsk [Sibzavod?] Tractor Spare Parts Plant, the capacity of the forge and heat treating shops is smaller than that of the machine shop.

The reject rate is still high, as much as 0.8-4 percent at some plants. The reject rate for some parts, such as piston rings, is particularly high.

Prompt conversion to the production of new models of trucks and tractors depends on the work of the tool shops. Requirements for technological accessories for modern constant flow mass production of a truck amount to 6,700-8,500 attachments and about 2,200 cold dies.

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